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Application for Patent

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אני, (שם המבקש, מענו ולגבי גוף מאוגד - מקום התאגדותו)
I (Name and address of applicant, and in case of body corporate-place of incorporation)

פרמהפלנטקס בע"מ, חברה ישראלית מת.ד. 160, נהניה

Pharmaplantex Ltd.

בעל אמצאה מכח הדין
Owner, by virtue of

שמה הוא
of an invention the title of which is

(בעברית) (Hebrew) תכשירי רוקחות לשימוש בהפרעות בקיבה ובמעיים (מערכת העיכול)

(באנגלית) (English) Pharmaceutical preparations for the treatment of gastro-intestinal troubles containing pharmacologically active furo-pyridine

מבקש בזאת כי ינתן לי עליה פטנט.
hereby apply for a patent to be granted to me in respect thereof.

• דרישה דין קדימה Priority Claim		
מדינת האגוד Convention Country	תאריך Date	מספר/סימן Number / Mark

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היום 5 בחודש ספטמבר שנת 1972
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40311/3

תכשירי רוקחות למיקול בהפרעות בקיבה ובמעיים המכילים פנקון ופוראזולידון.

Pharmaceutical preparations for the treatment of gastro-intestinal troubles containing phanquone and furazolidone.

Pharmaplantex Ltd.

(1257)

The present invention relates to new pharmaceutical preparations for the treatment of gastro-intestinal troubles.

There are known pharmaceutical preparations for the treatment of gastro-intestinal troubles which comprise 4, 7-phenanthroline-5,6-quinone (hereinafter called phanquone) and a 5,7-dihalogenated-8-hydroxyquinoline. These preparations are suitable for the treatment and/or prophylaxis of acute or chronic intestinal troubles, especially of dysbiotic - and/or infectious nature, for example diseases associated with diarrhoea. However, these preparations have an eubiotic effect, i.e. the regeneration of the normal intestinal flora destroyed by the infection or by the administration of antibiotics. This eubiotic activity results in the reduction in the number of yeast cells, the increase in the number of coli bacilli, and the disappearance of the unfavourable effect of antibiotics on yeasts and coli bacilli.

However, these known preparations have an undesirable side-effect as said 5,7-dihalogenated-8-hydroxyquinoline cause ocular side effects as is explained in the British Medical Journal 18.5.71 page 2910. Therefore, one has to be careful to prescribe these known preparations.

It has thus been desirable to find pharmaceutical preparations which would have the same advantages as the above mentioned compositions but which would not have the undesired occular side effects.

It has now surprisingly been found that if phanquone is admixed in a certain ratio with 3-(5-nitrofurfurylidene-amino)-2-oxazolidin-one (hereinafter called Furazolidone) a pharmaceutical composition is obtained which has the above mentioned advantages but not the unpleasant side effects.

The present invention thus consists in an oral administrable pharmaceutical composition for the treatment of gastro-intestinal troubles comprising as active ingredients Phanquone and Furazolidone in a ratio of 1 - 10 : 4 - 20. (All parts herein being parts by weight). Very often it will be desirable to add to the new pharmaceutical composition according to the present invention an anti-spasmodic agent. As a preferred agent there should be mentioned Scopolamine butylbromide However, also other antispasmodic agents are suitable, e.g. Diethyl(2-hydroxyethyl)methyl-ammonium-α- phenyl-cyclohexane glycolate bromide (called oxyphenonium bromide)and (2-Hydroxyethyl) diisopropyl-methyl-ammonium bromide xanthene-9-carboxylate (called Propantheline bromide).

This anti-spasmodic agent is preferably added in a ratio antispasmodic agent : active ingredients of about 1 - 10 : 25 - 30

The preferred range of the amounts utilised in the composition according to the present invention are

Phanquone	5 - 50 mg
Furazolidone	20 - 100 mg

and if an antispasmodic agent is present 0.1 - 10 mg. thereof should be added.

The above amounts may be varied within the limits indicated above. The higher ranges are considered for adults whereas the lower ranges are considered for children.

Experiments were conducted treating patients suffering from acute diarrhoea with either of the following preparations A or B.

Compound	A	B
Phanquone	20 mg	20 mg
Iodo chlorohydroxyquinoline	200 mg	-
Furazolidone	-	50 mg
Oxyphencmium bromide	2 mg.	-
Scopolamine butylbromide	-	2 mg.

As is apparent preparation A is a known preparation, whereas preparation B is one according to the present invention.

One group of patients were given preparation A for 5 days, whereas another group of patients were given preparation B for the same number of days. After treatment was finished it could be seen that 85% of the patients treated with preparation A were cured whereas 89% of the patients treated with Preparation B were cured. However, it has to be stated that whereas some of the patients who were treated with preparation A showed the above mentioned undesired ~~oral~~ rectal effects, no such effect could be observed with patients treated with preparation B.

The present composition may be prescribed per se but is preferably administered in those forms which are suitable for oral administrations, e.g. tablets, dragees, capsules, suspensions, etc.

These forms of administration are prepared by methods known per se, e.g. by administering the active compound with suitable binders, extenders, carriers, etc. As suitable additives there may be mentioned inter alia, lactose, starch, polyvinyl chloride, pyrrolidone, stearic acid mannitol, sorbic acid, talcum, saccrose, methylcellulose, alcohols, glycerin and natural or hardened fats. The preparations may furthermore contain suitable sweetening or colouring substances and flavourings.

The above mentioned tablets may be conventional tablets but they may also be ulso sugar or film coated tablets which are prepared by methods known per se in pharmacy.

Moreover, there may be prepared some preparations by which the furazolidone and the anti spasmodic agents, if present, dissolve in the stomach whereas phanquone dissolves in the intestines.

The invention will now be illustrated with reference to the following examples without being limited by same.

Example 1

1000 tablets were prepared from the following materials :

Phanquone	20 g
Furazolidone	50 g
Scopolamine butylbromide	2 g
Corn starch	70 g
Lactose	30 g
Talc	0.5 g
Magnesium Stearate	0.5 g

The tablets were prepared as follows :

The active compounds, the talc and the calcium carbonate were admixed in a ball mill. Thereafter a granulate was prepared by isolating the mixture obtained together with a part of the starch in aqueous ethanol and drying thereafter the granulate. Finally the granulate obtained was admixed with the magnesium stearate and the residual starch and the mass obtained was pressed into tablets in a conventional manner.

If preferred the tablets may be sugar or film coated according to the usual pharmaceutical technology.

Example 2

In a manner similar to that described in Example 1 there were prepared 1000 tablets from the following materials :

Phanquone	25 g
Furazolidone	60 g
Corn starch	60 g
Lactose	35 g
Calcium carbonate	50 g
Talc	1 g
Magnesium stearate	0.5 g

Example 3

A suspension was prepared by admixing the following compounds in a conventional manner :

Phenquone	0.8 g
Furazolidone	2.0 g
Calcium cyclamate	4.6 g
Glycerine monostearate	1.0 g
Flavouring agent	2.0 g
Liquid paraffin up to	100 ml.

Claims

1. An oral administrable pharmaceutical composition for the treatment of gastro-intestinal troubles comprising as active ingredients Phanquone and Furazolidone in a ratio of 1 - 10 : 4 - 20.
2. A composition according to Claim 1, which comprises also an anti-spasmodic agent.
3. A composition according to Claim 2, wherein the ratio anti-spasmodic agent : active ingredients is 1 - 20 : 25 - 30
4. A composition according to any of Claims 1 to 3 wherein the anti-spasmodic agent is Scopolamine butylbromide.
5. A composition according to any of Claims 1 to 4 being in the form of tablets, dragees, capsules, suspensions, etc.
6. A composition according to claim 5, comprising binders, extenders, carriers, etc.
7. A composition according to any of Claims 1 to 6 comprising 5 - 50 mg. of Phanquone and 20 - 100 mg. of Furazolidone
8. A composition according to claim 7, comprising also 0.1 - 10 mg. of an anti-spasmodic agent.
9. An oral administrable pharmaceutic composition for the treatment of gastro-intestinal troubles, substantially as here in before described with reference to the examples.

For the Applicants
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